

## **XII. Vessel Traffic Service**

The U.S. Coast Guard established the Vessel Traffic Service (VTS SF or VTS) in San Francisco Bay in 1972, following a serious collision between two tank vessels that resulted in great environmental damage to the Bay. The Coast Guard continues to operate the VTS system and monitors nearly 400 vessel movements per day. The region is considered a difficult navigation area because of its high-traffic density, frequent episodes of fog and challenging navigational hazards. In 1996 Congress considered reducing the current level of funding for VTS SF. In response, the Harbor Safety Committee voted to support continued federal funding to maintain VTS SF at its current level in order to ensure navigational safety in the Bay.

The VTS for the San Francisco Bay region has six components: (1) Automatic Identification System (AIS), (2) radar and visual surveillance, (3) VHF communications network, (4) a position reporting system, (5) traffic schemes within the Bay, and (6) a 24-hour center that is staffed with specially trained vessel traffic control specialists.

The geographic area served by VTS SF includes San Francisco Bay, its seaward approaches, and its tributaries as far as Stockton and Sacramento.

### **VTS Mission**

The primary mission of VTS San Francisco is to coordinate safe, secure and efficient transit of vessels in San Francisco Bay, including its approaches and tributaries, in an effort to prevent accidents or terrorist actions, which could result in loss of life, damage to property or the environment.

VTS implements and enforces the portions of the Ports and Waterways Safety Act that enhance navigation, vessel safety and marine environmental protection and promote safe vessel movement, by reducing the potential for collisions, allisions and groundings, and the loss of lives and property associated with these incidents.

VTS provides the mariner with information related to the safe navigation of a waterway. This information enhances the safe routing of vessels through congested waterways or waterways of a particular hazard. Under certain circumstances, VTS may issue directions to control the movement of vessels in order to minimize the risk of collision between vessels, or damage to property or the environment.

The owner, operator, charterer, master or other person directing the movement of a vessel remains at all times responsible for the manner in which the vessel is operated and maneuvered and is responsible for the safe navigation of the vessel under all circumstances.

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### **VTS Authority**

VTS regulatory authority comes from 33 CFR 161 Vessel Traffic Service Regulations. These regulations give VTS the authority to manage, control or direct vessel traffic within the VTS area. VTS may issue measures or directions to enhance navigation and vessel safety and to protect the marine environment, including, but not limited to:

1. Designating temporary reporting points and procedures;
2. Imposing vessel operating requirements; or
3. Establishing vessel traffic routing schemes.

The regulations can be found on the web in the Code of Federal Regulations at [www.gpoaccess.gov](http://www.gpoaccess.gov).

During conditions of vessel congestion, restricted visibility, adverse weather, or other hazardous circumstances, VTS may control, supervise, or otherwise manage traffic, by specifying times of entry, movement, or departure to, from, or within a VTS area.

Participation is required for all vessels that fall under the Bridge-to-Bridge Radio Telephone Act. Active participation (through a series of reports) is required for all vessels that fall under the Vessel Movement Reporting System (VMRS), defined as: power-driven vessels 40 meters in length or greater; tugs, 8 meters or greater while towing; and passenger vessels certificated to carry 50 or more passengers for hire.

Through the exchange of vessel transit information, VTS provides vessel operators with up-to-date information, thereby facilitating safe transits for vessels interacting on the waterways.

### **VTS Position Reporting Requirements**

Vessel position reporting requirements vary depending on a vessel's ability to transmit AIS information to VTS.

**Offshore.** Vessels are required to make radio reports on VHF Channel 12 when entering or exiting the offshore VTS reporting area, which extends approximately 30 miles west from the Golden Gate Bridge. Inbound vessels are required to report 15 minutes prior to crossing the offshore boundary, upon entering the respective Traffic Separation Scheme (TSS), and upon entering the precautionary area. Outbound vessels are required to report once at the San Francisco Sea Buoy, again at the TSS entrance buoy, at the terminus of the TSS and finally at the outer boundary of the VTS area. Radio reports include the name and type of vessel, route, course, speed, position and estimated times of arrival to various geographic locations. The VTS broadcasts a traffic report every 30 minutes: at minute 15 and 45 of each hour.

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**Within the Bay.** Vessels report 15 minutes prior to and upon getting underway, docking, mooring, or anchoring or when departing from the VTS area. Position reports are also made when passing under most bridges, when pilots change, when emergencies arise and when deviating from standard procedures. Ferries operating on a scheduled route make one report prior to departure, and do not report again unless they deviate from their schedule or route.

### **Traffic Routing within San Francisco Bay**

On May 3, 1995, the Coast Guard established seven Regulated Navigation Areas (RNAs) to reduce vessel congestion where maneuvering room is limited. These RNAs apply to the waters of the Central Bay, Oakland Harbor, San Pablo Bay, and the Benicia-Marine Railroad Bridge. There are four VHF radio/communications sites located throughout the Bay which give VTS full radio coverage. VTS operates on channel 14 VHF for inshore traffic and channel 12 for offshore traffic, and monitors channel 13 throughout the VTS area.

### **VTS Training Program Overview**

VTS Operators undergo extensive training. Before these traffic management specialists begin on-the-job training in the Operations Center, they undergo three months of intensive training at the VTS in the classroom and self-study, plus a month of offsite training. Offsite training typically includes a one-week Radar Observer Course, a one-week Automated Radar Plotting Aid (ARPA) course, a one-week Basic Shiphandling course and a one-week course in Bridge Resources Management course. All training is tailored to the individual needs of the trainee.

After this initial classroom and self-study period, new Operators/Traffic Management Specialists then undergo three to four months of closely supervised on-the-job training. This training cycle can be shortened if the person has previous VTS experience; however, the average time for a new employee to become qualified in their primary job is six to seven months. New supervisors can take an additional two to three months before qualification.

### **Outreach and Partnership**

The San Francisco Bar Pilots and the U.S. Coast Guard Vessel Traffic Service San Francisco, as well as other members of the maritime community, continue to share professional information in order to foster a team approach to the issue of navigation safety within the San Francisco Bay Area. VTS participates in the following outreach and partnership programs:

**VTS-Pilots Issue Committee (VPIC).** Founded in 1995, the VPIC—comprised of VTS’ Operations Director, Operations Administrator, Training Coordinator and members of the San Francisco Bar Pilots—meets approximately every quarter to discuss how VTS and the Bar Pilots can better serve each other. Both agencies might bring in scenarios or review recordings, then discuss the interactions from their respective points of view. For example, VTS may explain why a particular deviation request from RNA regulations was not granted. With the VPIC interaction, VTS can explain the response from a VTS perspective, and the pilots can then explain why a requested deviation seemed safer from the pilot’s point of view.

In addition to providing a forum for discussion, VPIC meetings have produced the automation of the transmission of ships’ arrival and departure information between VTS and the Pilots, the development of a communication protocol to resolve communication issues around marine construction projects, and the refinement of reporting procedures in order to provide mariners with more accurate reports of ongoing marine construction in the Bay area.

**San Francisco Vessel Mutual Assistance Plan (SF-VMAP).** SF-VMAP is composed of member vessels, the Coast Guard and passenger vessel operators who came together to develop an emergency response plan that would ensure that a sufficient level of safety exists on small passenger vessels and enhance local capabilities to manage a catastrophic, waterborne Search and Rescue incident. VTS was active in the creation of this plan and continues to participate in annual drills and meetings. The San Francisco Marine Exchange is working in partnership with the Coast Guard to perform the administrative requirements of SF-VMAP.

**Benicia-Martinez Railroad Drawbridge Working Group.** This group is composed of members of the maritime community, the pilots’ organization, various offices within the Coast Guard, the Union Pacific Railroad and major train lines. The group was formed to address the ability of the bridge to consistently provide a prompt response to lift requests or provide timely notification to an approaching vessel if mechanical problems or train movements would cause a delay in the bridge’s response.

**Outreach.** VTS personnel spend many hours with people from various segments of the San Francisco Bay maritime community to learn about mariners’ concerns and to educate mariners on how VTS can assist them. VTS personnel have been active participants on the Underwater Rocks Work Group, AIS Joint Planning Partnership, the Prevention through People Work Group, the Tug Escort Work Group, the Ferry Operations Work Group and the Navigation Work Group. Outreach efforts also have included many non-traditional stakeholders in the Bay area, such as the California Department of Transportation bridge engineers responsible for overseeing the various seismic retrofit projects in progress throughout the Bay.

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**Fishing Vessel Safety Group.** VTS is a participant in the FVSG. A VTS representative meets every other month with this group, which is comprised of representatives of other Coast Guard units, local fishermen groups and state agencies.

**Marine Events.** San Francisco Bay has more permitted marine events than any other port or city in the United States. VTS has an active outreach program to the boating public, which includes meeting with various recreational boating organizations throughout the year. VTS works closely with other Coast Guard personnel and yachting organizations during the permit process to prevent recreational vessels from impeding commercial traffic. The Coast Guard hosts annual Marine Event Workshops aimed at educating event coordinators about commercial maritime traffic, Rule 9 of the Navigation Rules and VTS operations.

**VTS Shipride Program.** All VTS personnel are required to participate in approximately six ship rides and/or shore-side visits each year. This, by far, is the best method for direct, person-to-person contact with port stakeholders and the sharing of suggestions. The requirements cover almost all areas of the maritime community: piloted ships, tugs, ferryboats and shore facilities.

### **VTS Operations and Requirements**

Over the years since the inception of VTS San Francisco, the Coast Guard has periodically identified the need for upgrading VTS equipment to include state-of-the-art technology. VTS' system of tracking vessels by computer was initially installed in 1997. In 2000, the software and hardware were upgraded, and a renovation of VTS' communications system was completed. This communication system upgrade involved replacing radios at each of the VTS' high sites, converting them from an analog to a digital microwave system and installing a new radio control system. In December 2004, VTS was upgraded with Automatic Identification System antennas and software.